

In the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1 1-8. (canceled).

1 9. (amended) A laser amplifier, comprising:

2 a gain medium;

3 a polarization rotator;

4 a passive polarizer;

5 a plurality of reflectors configured to define an optical path through the gain medium, the
6 passive polarizer, and the polarization rotator; and

7 a phase conjugator configured to receive a beam from the optical path after the beam
8 pulse has proceeded one or more transits through the optical path, the phase conjugator further
9 configured to return the beam with reversed phase to the optical path to proceed an equal number
10 of transits of the optical path in an opposite direction before exiting the optical path; and

11 a relay telescope having a telescope focal point, between the gain medium and the
12 passive polarizer, which is used for relaying images between the gain medium and a location in
13 the optical path near the passive polarizer, off angle beams being generated in the optical path in
14 addition to a desired beam, the relay telescope having a baffle near said telescope focal point to
15 block the off angle beams while passing the desired beam, the baffle comprising a solid member
16 having an optically transparent channel, the optically transparent channel having openings on
17 opposite ends of the solid member, and a waist within the solid member near said telescope focal
18 point, said waist being smaller than said openings, and said channel having sides which taper
19 near said waist.

1 10. (original) The system of claim 9, wherein said channel has sides which taper near said waist
2 at a grazing angle in a range of about 1 to 10 degrees.

- 1 11. (original) The system of claim 9, wherein said channel comprises a hollow in said member.
- 1 12. (original) The system of claim 9, wherein said optical cavity is aligned with walk off so that
2 stray beams that transit the optical cavity more times than specified are blocked by said baffle.
- 1 13. (canceled)
- 1 14. (original) The system of claim 9, wherein said location in the optical path is adjacent the
2 polarization rotator and the passive polarizer.
- 1 15. (original) The system of claim 9, including a second relay telescope in the optical path to
2 relay images between said location and the phase conjugator.
- 1 16. (original) The system of claim 9, including a second relay telescope in the optical path to
2 relay images between said location and the phase conjugator, the second relay telescope having
3 a baffle which blocks off angle beams.
- 1 17. (original) A laser amplifier; comprising:
 - 2 a gain medium;
 - 3 a polarization rotator;
 - 4 a passive polarizer;
 - 5 a plurality of reflectors configured to define an optical path through the gain medium, the
6 passive polarizer, and the polarization rotator; and
 - 7 a phase conjugator configured to receive a beam from the optical path after the pulse has
8 proceeded one or more transits through the optical path, the phase conjugator further configured
9 to return the beam with reversed phase to the optical path to proceed an equal number of transits
10 of the optical path in an opposite direction before exiting the optical path; and
 - 11 a relay telescope having a telescope focal point, between the gain medium and the
12 passive polarizer, which is used for relaying images between the gain medium and a location in
13 the optical path near the passive polarizer, the relay telescope comprising
 - 14 a first relay lens;
 - 15 a second relay lens;

16 a vacuum chamber between the first and second relay lenses, the first and second relay
17 lenses focusing beams at a common focal point within the vacuum chamber;
18 a kinematic mount within the vacuum chamber, adapted to secure beam baffles near
19 the common focal point; and
20 an access port on the vacuum chamber, adapted for insertion and removal of beam
21 baffles.

1 18. (original) The system of claim 17, including a baffle adapted to be mounted in said kinematic
2 mount, said baffle comprising a solid member having an optically transparent channel, the
3 optically transparent channel having openings on opposite ends of the solid member, and a waist
4 within the solid member near said telescope focal point, said waist being smaller than said
5 openings, and said channel having sides which taper near said waist.

1 19. (original) The system of claim 17, including a baffle adapted to be mounted in said kinematic
2 mount, said baffle comprising a solid member having an optically transparent channel, the
3 optically transparent channel having openings on opposite ends of the solid member, and a waist
4 within the solid member near said telescope focal point, said waist being smaller than said
5 openings, and said channel having sides which taper near said waist at a grazing angle in a range
6 of about 1 to 10 degrees.

1 20. (original) The system of claim 17, including a baffle adapted to be mounted in said kinematic
2 mount, said baffle comprising a solid member having a channel defined by a hollow in said
3 member, the channel having openings on opposite ends of the solid member, and a waist within
4 the solid member near said telescope focal point, said waist being smaller than said openings,
5 and said channel having sides which taper near said waist.

1 21. (original) The system of claim 17, including a baffle adapted to be mounted in said kinematic
2 mount, said baffle comprising a solid member having a channel defined by a hollow in said
3 member, the channel having openings on opposite ends of the solid member, and a waist within
4 the solid member near said telescope focal point, said waist being smaller than said openings,
5 and said channel having sides which taper near said waist at a grazing angle in a range of about 1
6 to 10 degrees.

1 22. (original) The system of claim 17, including a far-field, tapered baffle adapted to be mounted
2 in said kinematic mount, said far-field, tapered baffle comprising a solid member having an
3 optically transparent channel, the optically transparent channel having openings on opposite ends
4 of the solid member, and a waist within the solid member near said telescope focal point, said
5 waist being smaller than said openings, and said channel having sides which taper near said
6 waist; and

7 a far-field alignment baffle adapted to be mounted in said kinematic mount, said
8 alignment baffle comprising a pinhole aperture.

1 23. (original) The system of claim 17, including a near-field baffle mounted adjacent one of said
2 first and second relay lenses.

1 24. (original) The system of claim 17, including a first near-field baffle mounted adjacent said
2 first relay lens, and a second near-field baffle mounted adjacent said second relay lens to block
3 stray beams.

1 25. (original) The system of claim 17, wherein said optical cavity is aligned with walk off so that
2 stray beams that transit the optical cavity more times than specified are blocked by a baffle in
3 said kinematic mount.

1 26. (original) The system of claim 17, wherein said location in the optical path is adjacent the
2 polarization rotator and the passive polarizer.

1 27. (original) The system of claim 17, including a second relay telescope in the optical path to
2 relay images between said location and the phase conjugator.

1 28. (original) The system of claim 17, including a second relay telescope in the optical path to
2 relay images between said location and the phase conjugator, the second relay telescope having a
3 baffle which blocks off angle beams.

1 29-36. (canceled).